

JOINT OIL
ANALYSIS
PROGRAM

GYSGT AVERY

LEARNING OBJECTIVES

- TERMINAL LEARNING OBJECTIVE
- ENABLING LEARNING OBJECTIVE

BACKGROUND

- It's a scientific test and evaluations performed on used oil.
- Provides information on:
 - ✓ Internal condition of engines.
 - ✓ Transmissions.
 - ✓ Other oiled components.

TESTING



- **SPECTROMETRIC ANALYSIS:**
- **PHYSICAL PROPERTY ANALYSIS:**

TESTING

➤ **SPECTROMETRIC ANALYSIS:**

- ✓ **Determines presence of various wear metals in oil.**
- ✓ **Determines which component parts may have caused it.**
- ✓ **Periodic sampling helps detect abnormal wear.**
- ✓ **Used as a management/analysis tool.**
- ✓ **Final determination for component and /or parts replacement is the responsibilities of the unit CO or representative.**

TESTING

- **PHYSICAL PROPERTY ANALYSIS:**
 - ✓ Detects property changes.
 - ✓ Viscosity, Fuel dilution, or water content.
 - ✓ Prevents too frequent oil changes.
 - ✓ It's the preferred method which determines component or part replacement.



OIL AND FILTERS

- **Changed when recommended by the lab on items not under warranty.**
- **CO or designated representative will make final determination.**



WHEN TO SAMPLE

- **SCHEDULE**. In conjunction with PMCS.
- Equipment with a warranty will be sampled in conjunction of PMCS, per TM, until expired.

WHEN TO SAMPLE

- **SPECIAL.** Submit to JOAP Lab.
 - ✓ Request of Lab.
 - ✓ Eng. Or Trans. has been replaced.
 - ✓ Indication of problem, (overheating, excessive loss of oil, contamination, visible metal particles).
 - ✓ CO's discretion.
- Special samples will be banded w/red tape. DD Form 2026, marked SPECIAL in remarks, and border will be outlined in red.

WHEN TO SAMPLE

- **EXEMPTIONS.** Deployed or stored for more than 90 days, developmental purposes, static displays or training aids.
- **WARRANTY ITEMS.** Oil/filters changed per interval until expiration.
 - ✓ If a problem is identified monitor will notify warranty coordinator.

HOW TO SAMPLE

- If equipment has been operated in the last 30 days or ambient temperature allows, oil need not be warmed up.
- Oil needs to be brought to operating temperature if coming from storage, ambient temperature is to low or requested by the lab.
- Old and new oil must mix.

SAMPLING METHODS



- **VALVE METHOD.**
- **PUMP METHOD.**

VALVE METHOD

➤ **VALVE METHOD.**

- ✓ Open valve.
- ✓ Flush small amount from the line.
- ✓ Place bottle under valve.
- ✓ Fill to $\frac{1}{2}$ " from top.
- ✓ Replace lid.
- ✓ Write equipment serial# on bottle.

PUMP METHOD

- **PUMP METHOD.** Used to take samples from the filler neck or dipstick tube.
 - ✓ Determine how long tube needs to be, cut tube approx. 10" longer than dipstick. One end straight other end at an angle to prevent contamination.
 - ✓ Attach to pump using the straight cut end through the handle opening, extend $\frac{1}{4}$ " below pump head threads, tighten.

PUMP METHOD CONT.

- ✓ **Attach bottle to pump.**
- ✓ **Insert angle end into reservoir, Avoid touching bottom or sides**
- ✓ **Hold pump horizontally and pump, fill bottle to $\frac{1}{2}$ " from top of bottle, depress relief valve on top of pump to stop the flow.**
- ✓ **Remove bottle.**
- ✓ **Remove tubing, Discard properly.**
- ✓ **Write equipment serial# on bottle.**

PREPARING THE SAMPLE

- Complete a DD Form 2026 (Oil Analysis Request) for each sample.
- When mailing four samples or less use the Shipping Sacks.
- Insert sample into plastic bags and seal.
- Place sample and DD Form 2026 into sack.
- Send by 1st Class mail.

PREPARING THE SAMPLE CONT.

- When more than four samples, use the box the bottles came in, place DD Form 2026 in plastic bag and lay on top of bottles.
- When using a courier secure each DD 2026 to its sample.

FORMS

- **DD 2026 OIL ANALYSIS REQUEST:**
 - Standard tri-service form used for oil sample info.
 - Must accompany all samples.
 - Line by line instructions can be found in the TM-4700-15/1_, pg. 2-10-1.
- **DA 2408-20 OIL ANALYSIS LOG:**
 - Used to record results.
 - Line by line instructions can be found in the TM-4700-15/1_, pg. 2-11-1.

FORMS CONT.

- **DA 3254-R OIL ANALYSIS
RECOMMENDATION AND
FEEDBACK:**
 - ✓ Is used by the Army to recommend maintenance when an oil sample indicates a problem.
 - ✓ Not used to request re-samples or recommend oil changes.

SUPPORT

- **Army Labs.** are the preferred over other Labs because:
 - ✓ Offer both Spectrometric and Physical.
 - ✓ Provides a single database to maintain historical data.
 - ✓ No Army Lab. use nearest JOAP Lab. or authorized commercial Lab. that offer both methods of testing.
 - ✓ Marine Corps is strongly encouraged to use certified Labs. Managed or contracted by the Army.
 - Encl. 1 contains partial list per (TI-4731-14/1C)

SAMPLING MATERIAL

- Owning units must budget for sampling material. The following is what is required:
 - ✓ Oil Sampling bottles.
 - ✓ Tubing, Nonmetallic $\frac{1}{4}$ " outside diameter.
 - ✓ Pump. Oil Sampling
 - ✓ Sack, Shipping
 - ✓ Bag, Plastic DD Form 2026
 - ✓ DA Form 2408-20
 - ✓ Labels

EQUIPMENT ENROLLED IN PROGRAM



**ENGINEER EQUIPMENT
ENROLLED IN JOAP CAN
BE FOUND IN
ENCLOSURE 2 OF YOUR
STUDENT OUTLINE AND
IN THE TI-4731-14/1C.**

QUESTIONS

?

QUESTIONS TO YOU!!!

Q. Name two types of oil analysis?

A. **SPECTROMETRIC AND PHYSICAL PROPERTY**

Q. What is the DD 2026 used for?

A. **IT IS AN OIL ANALYSIS REQUEST**

BREAK!!!

